



(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **90830489.2**

(51) Int. Cl.⁵: **E04B 2/96**, E06B 3/54

(22) Date of filing: **30.10.90**

(30) Priority: **06.12.89 IT 2260989**

(43) Date of publication of application:
12.06.91 Bulletin 91/24

(54) Designated Contracting States:
AT BE CH DE DK ES FR GB GR LI LU NL SE

(71) Applicant: **METRA METALLURGICA TRAFILATI ALLUMINIO S.p.A.**
Via Provinciale Stacca, 1
I-25050 Rodengo Saiano (Brescia)(IT)

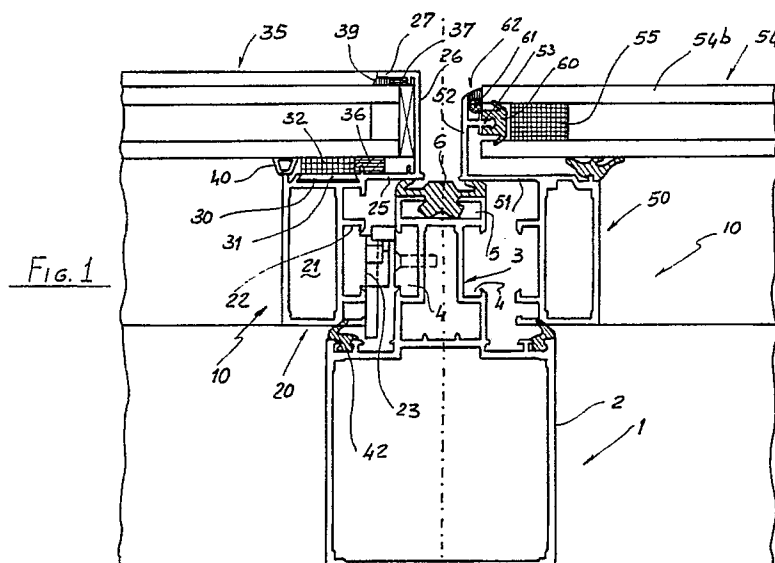
(72) Inventor: **Seghezzi, Loris**
c/o Metra S.p.A., Via Provinciale Stacca 1
I-25050 Rodengo Saiano (Brescia)(IT)

(74) Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti Dott.Prof.
Franco Cicogna Via Visconti di Modrone,
14/A
I-20122 Milano(IT)

(54) **Aluminium section member building continuous front.**

(57) The present invention relates to a front for buildings and the like, made of aluminium section members (1) which comprises a main frame, including uprights and cross-members, providing a grid structure, in which there are engaged elements, either of

the fixed or of the openable type, including a framework made of section members (20) having means (21) for coupling a plate-like (35) element which can comprise either a glass pane or a panel.



ALUMINIUM SECTION MEMBER BUILDING CONTINUOUS FRONT

BACKGROUND OF THE INVENTION

The present invention relates to a continuous front for buildings and the like, made of aluminium section members.

As is known, a main problem in making building continuous fronts is that of properly coupling plate-like elements which are inserted into the grid defined by the aluminium section member vertical and horizontal frames.

In fact, this plate-like elements, usually comprising glass panes or finishing panels, must be engaged with the structural elements of the fronts so as to provide a firm continuous assembly.

Known methods for coupling the mentioned plate-like elements, however, are affected by some drawbacks which are related both to the assembling operations, which are very complex and require a very long time, and to the tightness and stability of the performed couplings.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks, by providing a continuous front for buildings and the like, which is made starting from aluminium section members and in which is possible to structurally connect plate-like elements in a very quick and simple way, so as to provide a firm and stable assembly.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a continuous front in which the plate-like elements can be coupled in an effectively tight way.

Another object of the present invention is to provide such a building front which is very reliable and safe in operation and which, moreover, can be easily made starting from easily available elements and materials and which, moreover, is very advantageous from a mere economic standpoint.

According to an aspect of the present invention, the above aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a continuous front for buildings and the like, made of aluminium section members, characterized in that said front comprises a main framework, comprising uprights and cross-members cooperating for providing a grid structure in which there are engaged either fixed or openable elements, comprising a section member frame the section members of which are provided with means for coupling to said section members at least a plate-like element.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the invention will become more apparent from the following detailed description of a preferred embodiment thereof which is illustrated, by way of an indicative but not limitative example in the accompanying drawing where:

Figure 1 is a horizontal cross-sectional view showing a continuous front according to the invention and, more specifically, in the left half of the drawing there being illustrated a first embodiment of the invention, while in the right half thereof there is shown a second embodiment.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figure of the accompanying drawing, the continuous front for buildings and the like, made of aluminium section members, according to the invention, comprises a main framework which is conventionally made starting from uprights and cross-members consisting of aluminium section members, overallly indicated at the reference number 1.

These section members 1 are provided with a quadrangular shape central body 2, from a side of which there extend a lug 3 which is provided, on a side thereof, with recesses 4 for engaging with fixing means, as it will be disclosed in a more detailed way hereinafter and being provided, at the front thereof, with a recess 5 adapted to receive a tightness gasket 6 for providing tightness on the frames, indicated overallly at the reference number 10, which can be either of a fixed or of an openable type.

More specifically, these frames are also made of aluminium section members adapted to hold a plate-like element which can comprise either a glass pane or a finishing panel.

With reference to the first embodiment shown in the left portion of the drawing, it should be apparent that the frame comprises section members 20, with a central body 21 including a recess 22 for receiving fittings 23 adapted to lock the frame to a fixed structure or, if desired, means adapted to provide set movements thereof.

The section member 20 is moreover provided with an outer leg 25 therefrom a right-angle leg 26 extends which ends with a further outer leg 27.

The main feature of the present invention is that the outer leg 25 is provided with a recess or seat 30 therein a section member 31 can be engaged, having a trapezoidal cross-section, to which

there is coupled structural silicone 32 which can be associated with the glass pane or plate-like element, generically indicated at 35 so as to provide a firm tight coupling.

Moreover, between the glass pane 35 and leg 25 there is provided a polyethylene bottom joint 36 adapted to operate as a holding element, as well as an outer bottom joint 37 operating on the outer face.

The assembly further comprises a silicone gasket 39 coupling the outer sheet of the glass pane with the leg 27, a gasket 40 arranged between the central portion 21 and the inner face of the glass pane, and a sealing gasket 42 arranged between the section member 20 and the bearing section member 1.

In the embodiment shown in the right half of the drawing, there is provided a section member, overallly indicated at the reference number 50, which is conceptually analogous to the above disclosed section member, with the main difference that the outer leg, indicated at 51, does not comprise any recess and is coupled to a front leg 52 therefrom a pin length 53 extends which can be arranged between the inner sheet 54a and outer sheet 54b of a glass pane 54, which is designed so as to hold a structural silicone material 55 adapted to connect the inner sheet to the outer sheet of the glass pane.

Thus, there is obtained a monolithic glass pane which can be coupled to the frame owing to the provision of the pin 53 to be arranged between the two glass sheets; advantageously, on the pin there is provided a coupling gasket, indicated at 60 and made of a silicone rubber material.

A polyethylene joint 61 is moreover provided which is arranged between the front leg 52 and the outer glass sheet, as well as a silicone gasket 62 adapted to operate as an outer finishing element.

From the above disclosure it should be apparent that the invention affords the possibility of making continuous building fronts in which the plate-like element is structurally firmly coupled to the coupling frame so as to provide a monolithic assembly which is particularly stable.

The invention, as disclosed, is susceptible to several modifications and variations all of which will come within the scope thereof.

While the invention has been disclosed and illustrated with reference to some preferred embodiment thereof, it should be apparent that the disclosed embodiments are susceptible to several modifications and variations all of which will come within the spirit and scope of the appended Claims.

Claims

1. A continuous front for buildings and the like,

made of aluminium section members, characterized in that said front comprises a main framework, comprising uprights and cross-members cooperating for providing a grid structure in which there are engaged either fixed or openable elements, comprising a section member frame the section members of which are provided with means for coupling to said section members at least a plate-like element.

2. A continuous building front according to claim 1, characterized in that said structural coupling means comprise a section member which can be engaged in a recess formed on a front portion of a frame section member, to this section member there being associated structural silicone for coupling said plate-like element.
3. A continuous building front according to the preceding claims, characterized in that said structural silicone coupling section member has a trapezoidal cross-section for engaging it in said recess.
4. A building continuous front according to one or more of the preceding claims, characterized in that said front further comprises an inner bottom joint, made of a polyethylene like material, arranged between a front leg of said frame section member and an inner sheet of said glass pane, as well as an outer bottom joint, also made of a polyethylene material, arranged between an outer leg and the outer sheet of said plate-like element or glass pane.
5. A continuous building front according to one or more of the preceding claims, characterized in that said front further comprises tightness silicone material arranged in an adjoining relationship with said outer bottom joint and interposed between said inner glass sheet and said outer glass sheet of said plate-like element.
6. A continuous building front according to one or more of the preceding claims, characterized in that said plate-like element comprises an outer sheet and an inner sheet, which are coupled to one another by a structural silicone layer, having a groove at the periphery of said plate-like element.
7. A continuous building front according to one or more of the preceding claims, characterized in that said structural coupling means comprise a coupling pin projecting from a front leg of said frame section member and which can be en-

gaged between said inner and outer sheets.

8. A continuous building front according to one or more of the preceding claims, characterized in that said front further comprises a coupling gasket associated with said pin and adapted to be arranged between said inner and outer sheets. 5
9. A continuous building front according to one or more of the preceding claims, characterized in that said front further comprises a polyethylene joint arranged between said outer sheet and pin, there being moreover provided a silicone gasket arranged between one end of said front leg and said outer sheet. 10 15

20

25

30

35

40

45

50

55

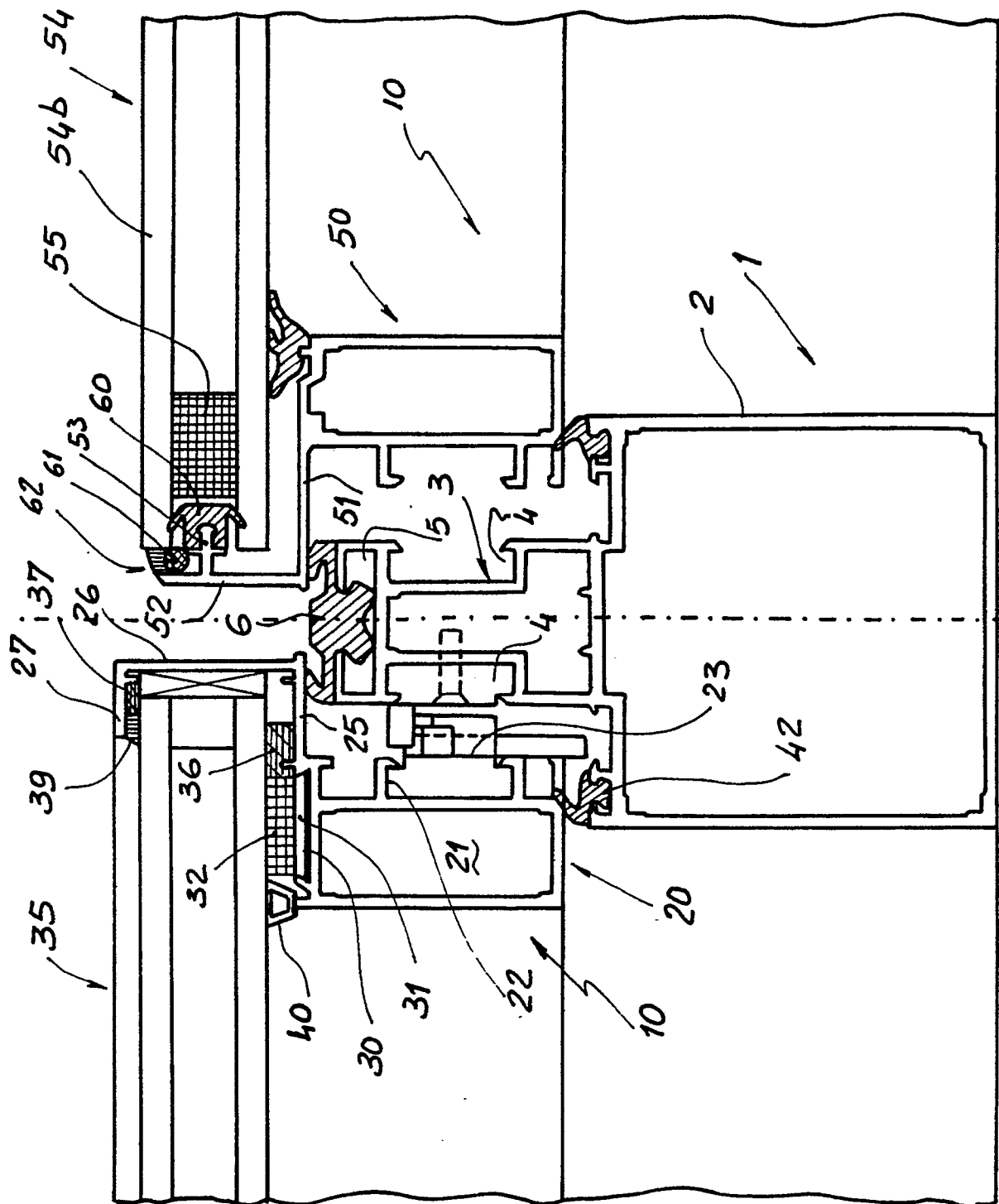


FIG. 1



EUROPEAN SEARCH REPORT

EP 90 83 0489

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X,Y	US-A-4 809 475 (HANS EMMER) * column 4, lines 14 - 21 ** column 5, line 29 - column 6, line 2; figures 1, 8 * - - -	1,2,3,5-8	E 04 B 2/96 E 06 B 3/54
X,A	EP-A-0 301 462 (POLY'ITALIANA S.R.L.) * column 11, line 56 - column 12, line 46 ** column 15, lines 4 - 23; figures 1, 2, 7-10 * - - -	1,2	
X,A	GB-A-2 155 981 (ANTHONY ALBERT TIDY ET AL.) * page 1, line 89 - page 2, line 59; figures 1, 3 * - - -	1,4	
Y	US-A-4 447 985 (RONALD J WEBER ET AL.) * column 3, line 45 - column 4, line 36; figures 2, 3 * - - -	3,5	
Y	EP-A-0 251 834 (VITRAGES ISOLANTES DE L' OUEST) * page 5, line 28 - page 6, line 32; figures 1, 4, 7 * - - -	6	
Y,A	GB-A-2 179 391 (C.C DI COSTA & CIA. S.R.L.) * page 1, lines 48 - 87; figure 1 * - - -	7,8,9	
A	FR-A-2 502 214 (WOLF PIERRE) * page 2, lines 18 - 24; claim 1; figure 1 * - - - - -	4	TECHNICAL FIELDS SEARCHED (Int. Cl.5) E 04 B E 06 B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of search 01 March 91	Examiner BARBAS A.
<div>CATEGORY OF CITED DOCUMENTS</div> <div>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention</div> <div>E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons ----- &: member of the same patent family, corresponding document</div>			